THAT WHICH IS CLAIMED:

1. A flexible composite membrane comprising a selected quantity of a polymeric material and a selected quantity of a particulate material, said membrane comprising:

a polymeric matrix wherein said particulate is substantially immobilized within said polymeric matrix; and

a selectively permeable skin on the outer surface of said membrane.

2. The membrane of Claim 1 wherein said polymeric material is selected from the group consisting of polyurethane, polyvinylidenefluoride, cellulose acetate, polyvinyl chloride and ethylene vinyl alcohol copolymer.

3. The membrane of Claim 1 wherein said polymeric material is naturally hydrophobic.

4. The membrane of Claim 1 wherein more of said particulate material is disposed within the interior of said membrane than within said skin.

5. The membrane of Claim 1 comprising between about 5% and 30% of said polymeric material.

6. The membrane of Claim 1 comprising about 70% by weight of said particulate material.

7. The membrane of Claim 1 further comprising a support within said membrane.

8. The membrane of Claim 7 wherein said support comprises a polyester mesh material.

9. The membrane of Claim 1 comprising a non-fiberized polymeric material.

10. The membrane of Claim 7 wherein the thickness of said membrane is between about 100 and 1500 μm.

11. The membrane of Claim 7 wherein the thickness of said membrane is between about 400-1000 μm.

12. A method for making a flexible membrane having a polymeric matrix and a particulate material immobilized within said matrix, said method comprising:

providing a support having a first substantially flat surface and a second substantially flat surface;

combining at least a polymeric material and a selected quantity of particulate material to form a blend;

applying a substantially uniform thickness of said blend to each of said surfaces.

13. The method of Claim 12 wherein said polymer solution comprises a polymer selected from the group consisting of polyurethene, polyvinylidenefluoride, cellulose acetate and polyvinyl chloride.

14. The method of Claim 12 wherein said polymer is hydrophobic.

15. The method of Claim 12 comprising selectively distributing said particulate material within said membrane.

16. The method of Claim 12 wherein said membrane comprises between 5% and 30% of said polymer and 70-95% of particulate.

17. The method of Claim 12 wherein said membrane comprises at least 50% by weight of said particulate material.

18. The method of Claim 12 comprising dissolving said polymer in an organic solvent to provide said polymer solution prior to combining said polymer solution with said particulate material.

19. The method of Claim 12 further comprising contacting said support with a liquid that is a non-solvent for said polymeric material by immersing said support in a bath of said liquid for a selected period of time after said applying step.

20. The method of Claim 12 wherein said blend is applied to a continuously moving sheet of said support.

21. The method of Claim 19 wherein said support is alternately immersed in and removed from said water bath.

22. The method of Claim 21 further comprising drying said membrane.

23. The method of Claim 22 comprising drying said membrane for at least 10 minutes at 50° C.

24. The method of Claim 12, 14 or 23 further comprising treating said membrane with a wetting agent or hydrophilizing coating agent.

25. The method of Claim 24 wherein said agent comprises between 0.20% and 1% polyvinyl alcohol.

26. The method of Claim 24 wherein said agent comprises glycerol.

27. The method of Claim 24 wherein said agent comprises sodium chloride.

28. The method of Claim 24 further comprising drying said membrane after said treating.

29. The method of Claim 27 wherein said agent comprises 0.9% sodium chloride.

30. The method of Claim 12 further comprising introducing said support and said blend into a housing wherein said blend is applied to the surfaces of said support.

31. The method of Claim 12 further comprising contouring said membrane into a pleated sheet.

32. The method of Claim 12 further comprising contouring said membrane into a rippled sheet.

33. The method of Claim 30 comprising substantially excluding particles of said particulate material having a diameter greater than about 20 μM.

34. The method of Claim 12 comprising continuously introducing said support and said blend into a housing;

applying a selected thickness of said blend to opposite surfaces of said support;

advancing said support with said blend applied thereon into at least one treatment bath at a rate of approximately 1 ft/min.;

drying said support with said blend applied thereon; and

contouring said dried support with said blend applied thereon into a rippled sheet.

35. The method of Claim 12 wherein said polymeric material comprises either a) at least two polymers or b) at least two copolymers or c) at least a polymer and copolymer.

36. The method of Claim 22 further comprising cutting said membrane to a desired size and sealing at least one edge of said membrane.

37. A flexible composite membrane comprising a selected quantity of a polymeric material and a selected quantity of fine particles, said membrane comprising a polymeric matrix wherein said particles are substantially immobilized within said polymeric matrix, and wherein the majority of said particles have a diameter less than about 20 μ.

38. A flexible composite, contoured membrane comprising a selected quantity of a non-fiberized polymeric material and a selected quantity of a particulate material, said membrane comprising a polymeric matrix wherein said particulate is substantially immobilized within said polymeric matrix.

39. A flexible composite membrane comprising a selected quantity of a polymeric material and a selected quantity of a particulate material, said membrane comprising a polymeric matrix wherein said particulate material is substantially immobilized within said polymeric matrix, and wherein said membrane has a thickness of at least about 400 μm.